ENGINEERING NEWS-RECORD

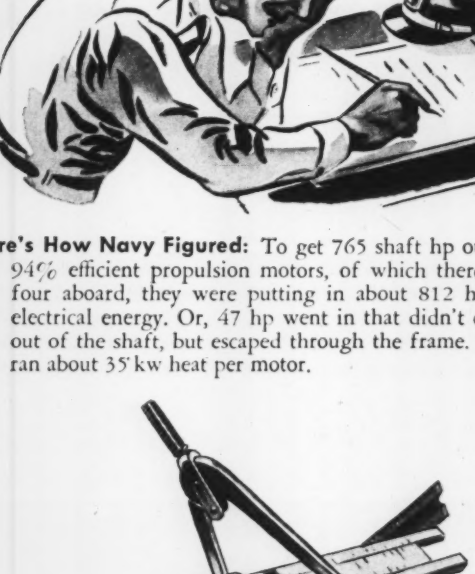
Port works at Chimbote Bay, Peru, are being built by a U. S. contractor

Ever Figure What a 765 hp Motor Throws Off in Heat?

Our Navy Did... on fleet tugs down in the tropics, where engine room temperatures were running high as 140°F! In 25 by 30 ft of space, that's like having 140, thousand-watt radiant heaters "raising blisters" on you all at one time!

Here's How Navy Figured: To get 765 shaft hp out of 94% efficient propulsion motors, of which there are four aboard, they were putting in about 812 hp of electrical energy. Or, 47 hp went in that didn't come out of the shaft, but escaped through the frame. This ran about 35 kw heat per motor.

Well, Our Temperatures Began To Rise when Navy laid down its 'specs'. "Design a marine water-cooled motor—make it fit into the floor space of your open drip-proof type—no major changes in ship design. Make it extra-dependable, as fireproof as practicable".



We Measured, and figured, and made designs—used a new, toxic gas-free Glass Melamine insulation that required extensive changes in design and fabrication. We put special air passages inside the motor—yet kept accessibility. We saved 25% space over our previous commercial marine design by figuring a special shape cooler—without cutting down cooler efficiency.

Then We Made Those Motors Shock-Proof — by cutting out all cast iron, re-designing structural members for greater strength, resorting to modern, proven fabrication throughout. Result: A new kind of water-cooled motor that put a "tough" Navy job on ice, and also proved a point! A 1999

There's a Point to this story: Every time Allis-Chalmers engineering discovers new ways of solving *special* motor problems, like this one, it also learns how to build better *standard* motors for you! Watch for these new and better motors from A-C. ALLIS-CHALMERS, MILWAUKEE 1, WIS.

Wait 'til you see the NEW ALLIS-CHALMERS MOTORS!

HEAR THE BOSTON SYMPHONY: *Every Saturday Evening, American Broadcasting Co.*

News of the Week

ENGINEERING NEWS-RECORD • MARCH 14, 1946 • VOLUME 136 • NUMBER 11

Bill grants broad powers to new housing expediter

House refuses subsidy provisions included in original Patman bill, but gives expediter authority over ceilings, supplies, and selling price of newly erected dwellings

By a vote of 357 to 24 the House of Representatives March 7 passed the Patman Housing Bill (H.R. 4761) which creates a Housing Expediter with broad powers.

The proposal to provide $600,000,000 for subsidies for increasing the output of building materials was defeated (*ENR* March 7, Vol. p. 325). But the expediter is given much of the authority over the Office of Price Administration and the Civilian Production Administration for fixing the ceiling selling prices of construction supplies, and the distribution of materials needed for housing work that was called for in the original Patman proposal.

The bill, as approved by the House, is so written that the Housing Expediter can also serve as head of another government agency. This provision will permit the President to give Wilson W. Wyatt, now administrator of the National Housing Agency, the duties of housing expediter as well. The President has indicated that this will be done if and when the bill is made law.

All functions and authority formerly vested in the Office of War Mobilization and Reconversion that will aid housing work are transferred by the bill to the Housing Expediter. The powers so transferred include that of issuing orders to the Office of Price Administration to make such price adjustments as are considered necessary to stimulate the production of building materials.

Power is far reaching

This power is considered far-reaching, and is defined in the bill as follows:

"Whenever in the judgment of the expediter there is a shortage in the supply of any material or of any facilities suitable for the construction and/or completion of housing accommodations in rural and urban areas, and for the construction and repair of essential farm buildings, he may by regulation or order allocate or establish priorities for the delivery of such material or facilities in such manner, upon such conditions, and to such extent as he deems necessary and appropriate in the public interest and to effectuate the purposes of this title; and the expediter is authorized regardless of any other legislation to direct the Office of Price Administration to make such price adjustments as are necessary to stimulate the production of building materials."

Authority of the NHA to insure mortgages up to a total value of $2.8 billion is also provided in the bill. This increases the present insuring authority of the agency by $1 billion. Limitations are placed on the principal obligations of such mortgages, varying from $5,400 for a single-family residence to $16,200 for a 4-family dwelling.

Other provisions of the bill as finally passed, include: Authority for the Housing Expediter to give veterans preference in the occupancy of mortgage-insured property, and authority to place ceilings on the selling prices of newly constructed homes.

Senate to get added requests

If the latter feature becomes effective, it would be necessary for the seller to obtain a certificate from the proper agency designated by the Housing Expediter to show that the selling price had been approved. To obtain such a cerificate the builder would need to file a description of the property, along with other data.

It has been revealed that when the bill comes before the Senate, that body will

(*Continued on p. 6*)

Pay rises still require WAB approval

Pay increases in the building and construction field cannot be made under the new regulations issued March 10 by Chester Bowles, Economic Stabilization Administrator, without approval of the Wage Adjustment Board.

Although the new regulations of the Stabilization Administration are designed to simplify and speed wage adjustments generally in industry, they made no immediate change as regards the construction field.

With respect to that industry, Sec. 102 (B) of the new regulations explains:

"Pending provision to the contrary by the National Wage Stabilization Board, a wage or salary increase may not lawfully be made with respect to employees in the building and construction industry who are subject to the jurisdiction of the Wage Adjustment Board, unless the increase, before being put into effect, has been approved according to the applicable requirements of the National Wage Stabilization Board and the Wage Adjustment Board."

The growing practise of signing short-term collective bargaining agreements by building trades unions and contractors was scored at he same time by Arthur D. Hill Jr., chairman of WAB, as a grave threat to stabilization and a "serious threat to the housing program."

Mr. Hill said the board would refuse requests for wage increases in collective bargaining contracts that were obviously "stop gaps". "The building construction industry is still under stabilization controls—the only branch of industry that is—and all wage adjustments are subject to approval," Mr. Hill added.

"Heretofore, the industry-wide practice has been to contract for one or more years, consistent with the degree of certainty required for the undertaking of construction jobs of many months' duration," he added. "Initiation of the present unprecedented system of bargaining is considered by me . . . to constitute a grave threat. Petitions for increases filed with the board, supported by collective bargaining agreements reflecting terms obviously designed to be mere stop gaps, will not be approved."

NEWS IN BRIEF

In telegraphic form, here are latest news developments on the engineering and construction front during the week.

Highways—*South Carolina's* legislature approved a 3-year, $19,000,000 secondary road construction program. . . . *Pennsylvania* announced a program to spend $9,114,000 on farm-to-market roads this year. . . . *North Carolina* formulated a 10-year schedule to improve 3,000 miles of secondary roads a year. . . . *Ohio* will spend more than $3,000,000 on primary and access roads around *Toledo*. . . . *Georgia* allotted $5,560,000 for railroad crossing elimination projects. . . . *Minnesota* launched its $60,000,000 postwar roads program with an initial bid-letting Mar. 15. . . . *Mississippi* awarded first contracts on its construction program, for work in Pearl River and Leake counties. . . . *New York* announced it will open bids March 20 on a bridge over the Tioghnioga River at *Whitney Point*. . . . *New Mexico* awarded three contracts, aggregating $700,000, for work in the southeast corner of the state. . . . *Idaho Falls, Idaho,* said it would spend $1,000,000 for street and sidewalk paving. . . . The *Minneapolis, Minn.*, planning commission, recommended a $75,000,000 highway reconstruction project.

Bond Issues—Voters of *Philadelphia, Pa.*, will decide May 21 on a $78,200,000 bond issue for general civic improvements. . . . *Jackson, Miss.*, will vote in April on a $3,500,000 issue to finance street repairs, parks, and sewage facilities. . . . *Carrollton, Ga.*, will vote in April on a $600,000 issue to finance road repairs.

Sewage Disposal—City commissioners of *Albany, Ga.*, approved expenditure of $1,214,560 for storm sewer extensions. . . . *Kelso, Wash.*, awarded a $30,000 contract for construction of a sewage disposal plant. . . . *Pennsylvania's* State Sanitary Board instructed all coal operators to install desilting plants. . . . *Joliet, Ill.*, awarded a $407,000 contract for installation of a new sewer system. . . . The *Tennessee* Department of Sanitation approved plans for *Knoxville's* $2,850,000 sewage disposal system.

Water Supply—Preliminary work began on a $1,500,000 improvement program for *Coffeyville, Kan.* . . . *Bradenton, Fla.*, announced plans for a $500,000 water system expansion. . . . *Pasco, Wash.*, took title to land on which to build a proposed $250,000 filtration plant.

Building Construction—A $1,000,000, 200-bed hospital will be built at *Ft. Scott, Kan.* . . . The University of Missouri, Stephens College and Christian College, all at *Columbia, Mo.*, announced construction plan aggregating $34,000,000 over the next 10 years. . . . Ford Motor Co. will build a $6,000,000 branch plant at *Hapeville, Ga.* . . . Allied Mills Inc., will build a $1,000,000 feed mill at *East St. Louis, Ill.* . . . Johns-Manville Corp. announced plans for a $3,000,000 plant at *Natchez, Miss.* . . . Northeastern University will build a $1,000,000 students' building at *Boston, Mass.*

Miscellany—*Ohio* approved pay increases for its 12 state highway department division engineers. . . . *Greensboro, N. C.*, worked on plans for a $1,000,000 vehicular tunnel under the campus of the University of North Carolina. . . . *Ocala, Fla.*, studied the feasibility of erecting its own electric plant. . . . The *Los Angeles, Calif.*, suburbs of *Burbank* and *Bellflower* announced school-building programs totalling $3,750,000.

Pittsburgh airport work will start soon

About $2,500,000 of work is expected to be started soon at the Greater Pittsburgh airport, according to John B. Sweeney, director of the aviation department of Allegheny County. Construction of an administration building will be started, and excavation, fill, drainage and landscaping will be handled immediately.

Authority to plan a $3,000,000, 4-mile highway from the airport to U. S. Route 30 has been granted by Allegheny County Commissioners.

Construction of a hotel where airlines' passengers may stay overnight is planned by the commissioners. It would be built on a strip of land recently acquired to prevent undesirable developments adjoining the airport.

Calendar of Meetings

NATIONAL

American Shore and Beach Preservation Association, annual meeting, Hotel Carlton and National Academy-Research Council Building, Washington, D. C., March 21 and 22.

National Society of Professional Engineers, conference of state presidents of member state societies, and board of directors meeting, Deshler-Wallick Hotel, Columbus, Ohio, March 29-30.

American Concrete Pipe Association, 38th annual convention, Edgewater Beach Hotel, Chicago, Ill., April 11-12.

American Society of Civil Engineers, spring meeting, Bellevue Stratford Hotel, Philadelphia, Pa., April 17-19.

REGIONAL

New England Section, American Water Works Association, Statler Hotel, Boston, Mass., March 21.

New York Section, American Water Works Association, Mark Twain Hotel, Elmira, N. Y., March 28-29.

Indiana Section, American Water Works Association, Union Building, Purdue University, Lafayette, Ind., April 2-3.

Canadian Good Roads Association, annual convention, Chateau Frontenac, Quebec City, Canada, April 2-5.

Canadian Section, American Water Works Association, annual convention, General Brock Hotel, Niagara Falls, Ont., April 8-10.

Montana Sewage Works Association, Butte, Mont., April 11-12.

Montana Section, American Water Works Association, Finlen Hotel, Butte, Mont., April 12-13.

Arizona Sewage and Water Works Association, Tucson, Ariz., April 18-20.

Florida Engineering Society, 13th annual meeting, Jacksonville, Fla., April 25-27.

Washington—Truck production dropped to 668,578 units in 1945 from 761,368 units in 1944 largely because of the changeover from military to commercial vehicles following V-J Day and the work stoppages in the fourth quarter, the Civilian Production Administration announced recently.

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Navy completing award on $70 million storage facilities for inactive fleet

Bases for "canned" ships of huge reserve force to be located on coasts—Bureau of Yards and Docks supervises work

In the near future, the U. S. Navy's Bureau of Yards and Docks will complete the award of contracts for construction of $70,000,000 worth of facilities to berth more than 1000 inactivated naval ships.

The program, part of a long range plan by the Navy to keep a large "inactive" fleet available with minimum expense and time consumed in placing the ships in commission will see projects built on both the east and west coasts.

In berthing the inactivated ships, a thin film of rust-preventive compound is placed on working parts of machinery and the exposed ferrous metal of the ship. Underwater portions of the hulls will be covered with a hot plastic paint, while the ship is placed in drydock. The vessels will also be made weather tight, and dehumidifying machinery installed to maintain the relative humidity at 28 to 30 percent, the Navy has announced.

Among the major work for which contracts either have been let or are in the process of preparation are a $10,000,000 job at Green Cove Springs, about 25 miles up the St. Johns River from Jacksonville, Fla.

Other work includes: A $2,330,000 contract for pier construction work at Orange, Tex., recently awarded to Brown & Root of Houston, Tex.; a $2,250,000 project for additional berthing facilities at Mare Island, Cal.; a $7,000,000 additional berthing facility at the San Diego, Cal., naval base; $5,000,000 in construction at Tongue Point, Astoria, Ore.; $7,500,000 of additions to the naval shipyard at Bremerton, Wash., and a $2,000,000 project for Tacoma, Wash.

Showing the diverse locations of the berthing installations are other contracts recently awarded or announced as being planned. These include: work at New London, Conn.; Baltimore, Md.; Bayonne, N. J.; Philadelphia Navy Yard; Norfolk, Va.; Charleston, S. C.; Alameda, Calif.

Construction of the different bases is being supervised by district offices of the Bureau of Yards and Docks. Some of the plans are being prepared in Washington, D. C., and the remainder by the district staffs.

The U. S. Maritime Commission recently awarded a contract to the American Dredging Company for dredging at Wilmington, N. C. to provide a basin for 500 surplus merchant ships (*ENR* Dec. 27, 1945, vol. p. 852). About 9,600,000 cu. yd. will be dredged from the bottom of the Brunswick River to make a storage basin 2¾ miles long, 1,200 ft. wide and between 10 and 13 ft. deep.

The basin will be connected with the Cape Fear River by a 2,300 ft. channel 13 ft. deep and 300 ft. wide.

Western Ocean Division

The Western Ocean Division, with three districts, has been added to the Army Engineer organization, Lt. Gen. R. A. Wheeler said March 5. The districts will be known as the Manila, Okinawa and Honolulu districts—the last named being detached from the Pacific Division.

Headquarters of the new division will be at San Francisco. Col. George Mayo is acting division engineer of the new division and of the Pacific Division.

The Manila District will have headquarters at Manila and will include in its limits the islands of the Philippine Archipelago. The Okinawa District will include the Ryukyu Islands of the Japanese Archipelago.

Armour C. Polk dies, was vice president of ASCE

Armour Cantrell Polk, 67, consulting engineer and vice-president of the American Society of Civil Engineers since 1945, died at his home in Birmingham, Ala., March 1.

At his death, Mr. Polk was a member of the Birmingham consulting engineer firm of Polk, Powell and Hendon.

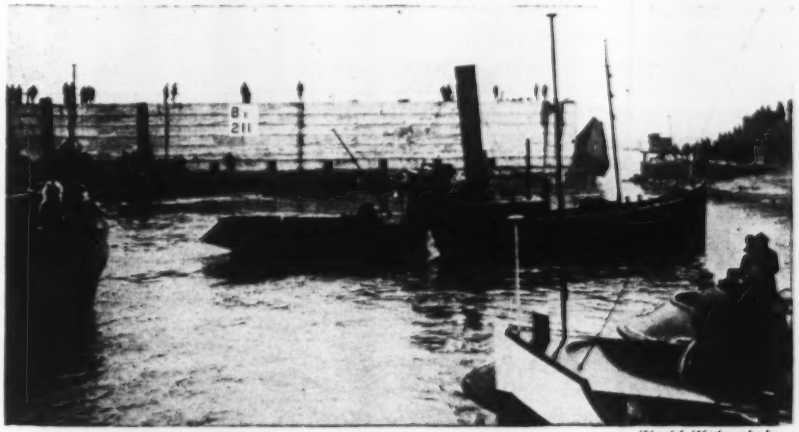
A graduate in 1903 of Rensselaer Polytechnic Institute, Troy, N. Y., Mr. Polk began his engineering career with the Colorado and Santa Fe Ry. in Texas and Indian Territory, and throughout his career specialized in railroad, power and public utility work.

In 1936, he was retained by the City of Birmingham to design and supervise construction of a $6,000,000 industrial water supply system. In 1938, he again entered private practice.

Hathaway succeeds to post

The ASCE's New York headquarters announced March 5 that Mr. Polk would be succeeded as vice president by Gail A. Hathaway, senior director of the society's second zone.

Mr. Hathaway, a resident of Hyattsville, Md., is now attached as a civilian aide, to the Office of the Chief of Engineers, at Washington, D. C. A native of Menomonie, Wis., Mr. Hathaway, is a graduate of Oregon State College and was associated with the U. S. Engineer Department previously (1928-37) at Kansas City, Mo.



World Wide photo

Dutch close last breach in Walcheren dike

The last breach in the great dikes that kept the sea out of low-lying portions of Walcheren Island, Holland, was closed recently with the sinking of a 4,000 ton "Phoenix" barge used by Allied armies in their invasion and subsequent port activities on the continent of Europe.

The original sea-wall was breached by Royal Air Force planes in the winter of 1944, in a successful attempt to dislodge German "buzz bomb" installations on the island.

Dutch engineers—using hand labor and salvaged materials—have been at work on the Walcheren dikes since early summer of 1945 (ENR Jan. 3, vol. p. 8) in an attempt to get the island's valuable farmland back into early production to help the food situation.

New York builds homes for city's war veterans

Temporary shelters moved from Georgia for re-erection on city-owned land

Temporary housing originally erected in Brunswick, Ga., is now being re-erected at Canarsie Beach Park in New York City together with some surplus new Quonset Huts from the Navy to provide emergency shelter units.

The 976 dwellings from Georgia are in 6- or 8-apartment units—wallboard-on-wood-stud one-story buildings that originally were largely prefabricated in panels at the site to expedite erection. Floors and some of the roofs were built continuous throughout the length of the 20 ft. wide up to 140 ft. building and were cut into sections about 6x12 ft. for moving. In Georgia, the exterior wallboard was exposed but in New York it will be covered by tar paper and clapboard siding. Aluminum foil insulation is being added under the floors and batt insulation will again be used over the ceiling.

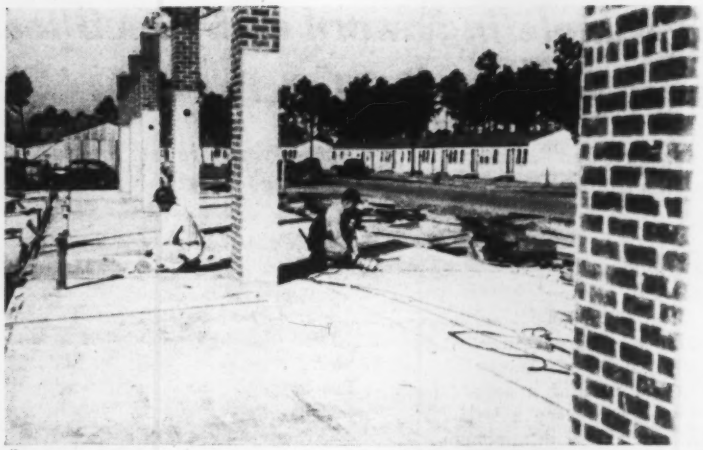
On the first units taken down and shipped, the asphalt shingles were removed only along the roof-panel lines. On re-erection, it has been found more economical to remove all of the shingles and ship them bundled for replacement than to patch the roof.

The apartments have a living room, kitchenette, toilet with shower, and two bedrooms—arranged, however, so that adjacent apartments can be made one and three bedroom units. Cost of moving similar buildings has been $1,400 per dwelling unit, but work is not far enough along yet to establish a cost for this project. The figure mentioned is exclusive of land and installation in the ground of utility lines such as water and sewer and for streets and sidewalks.

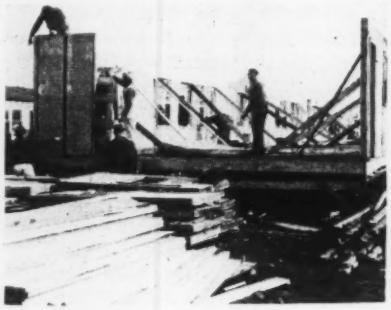
Preparation of the site for use, including streets and utility line installations is being done for the New York City Housing Authority. The city is doing its own engineering under W. C. Vladeck, assisted by Harrison, Ballard and Allen as consultants. Del Balso Construction Corp. holds a fixed-price contract for the work.

Dismantling the buildings in Georgia, transporting them by rail to New York and reassembling them is being handled by the Federal Public Housing Authority on cost-plus-fixed-fee contracts under supervision of Stanley W. Moore.

For the FPHA, Feld and Timoney are consulting engineers on re-erection of the New York housing units. General Fabricating Construction Co. of New York is dismantling the units in Georgia and rebuilding them.

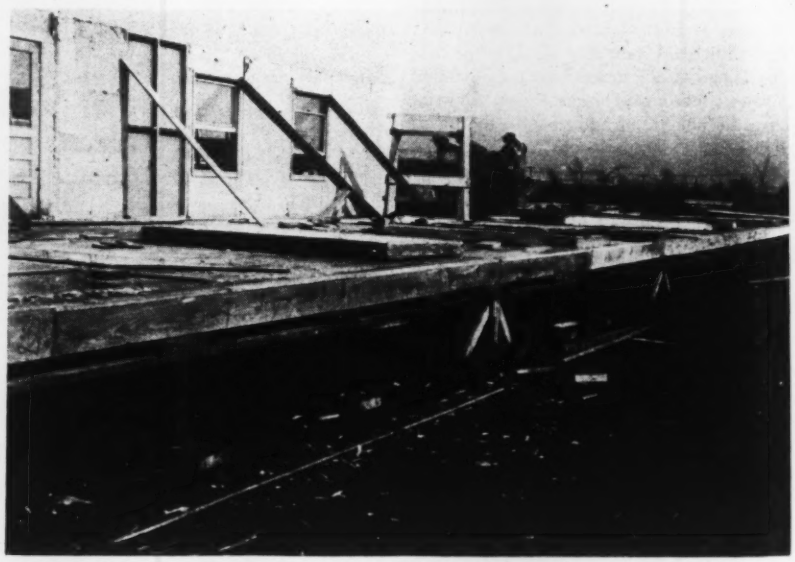


Floors originally were built in place for the full length of the six or eight apartment buildings, and were sawed into panels for moving.



Windows were barred and left in place for shipping, with surprisingly little breakage. General assembly, shown above, was a comparatively simple matter at the new site.

Wallboard was used as exterior walls originally, but for the New York use, clapboard and tarpaper siding was placed in order to cope with a more rigorous climate.



Foundations are longitudinal, creosote dipped mud sills, laid on top of undisturbed ground without levelling, and pressed down with a small roller. Wedges are provided at the top of the posts to take up future settlements.

A survey of the current conditions in the engineering schools

Many can not take any more students at present, though veterans are given preference—Housing situation is difficult everywhere

With the object of obtaining information concerning current conditions in engineering schools, especially in regard to what is being done or planned for the benefit of returning veterans, the *Engineering News-Record* recently sent a brief questionnaire to a number of representative civil engineering institutions in different sections of the country.

The questions asked were:

1. Can you take more students?
   (a) in the upper classes.
   (b) in the lower classes.
   If so, what is the approaching date at which you will take in new students?
2. What is your housing situation, especially with respect to accommodations for married men?
3. Have you made any important changes in your courses, such as adding refresher courses for returning veterans or new courses not given before the war?

In brief, it can be said that the answers received from a typical cross-section of our engineering schools indicate that most of them are at or near capacity especially in the lower classes; that the housing shortage is very acute, particularly in the case of married students: that many refresher courses are being offered: and that in some cases new and revised courses are being added to curricula for the benefit of veterans and other students as well.

Following is the first instalment of replies received. More replies will be published in subsequent issues.

Cornell University, College of Engineering, Ithaca, N. Y.—"We are taking in a limited number of students this spring, almost entirely from persons who formerly were in attendance at Cornell. Next fall we expect to take in some students directly from high school and some veterans who have not previously attended Cornell, as well as those who were former students. In certain of our programs we shall have a considerable number of returning Cornellians and probably will have little room for others, but I must condition this statement on the possibility of changes between now and the opening of the small term.

"Our housing situation is very acute. We are limiting enrollment this spring term to approximately 6900 students, mainly on account of the housing situation. A considerable number of war emergency housing units are being erected and we may have more by next fall, but at present the housing problem is a very serious one.

"We are making few changes in our pre-war curriculum to meet the needs of veterans, except that we are providing special evening sessions for men who desire to catch up on mathematics and the physical sciences, and are scheduling returning veterans, at times, for less than a full normal load."—Lynn A. Emerson, Assistant Dean.

Lafayette College, Department of Civil Engineering, Easton, Pa.—"We can take more students in the upper classes but not in the lower. The next date for new students is September, 1946.

"The housing situation is poor as far as married men are concerned. Conditions are improving and may be decidedly better in a month or two.

"No refresher courses at present. They were given last term and will be provided again if needed. We are endeavoring to keep our plans plastic in order to meet changing conditions as they develop."—Wm. S. Lohr, Head Department of Civil Engineering.

University of Wyoming, College of Engineering, Cheyenne, Wyo.—"Although the student housing situation at the University of Wyoming is bad, it is not as critical as that reported by some of the other colleges in the country. It has not been necessary, so far, to limit entrance to the university due to a shortage of housing facilities. Fifty trailer houses have been installed and are now occupied. 50 more are enroute from eastern Washington and 50 two-family prefabricated houses now being transported from that state will be ready for occupancy by April 1.

"Occupancy of the trailer and prefabricated houses is limited to married ex-service men and women. Average rental is $24 per month, including electric lights, oil heat, water and community laundry facilities. Although the houses are not permanent, they are well insulated and sturdy enough to serve until more permanent structures can be erected. Temporary quarters for single ex-service men have been established in one of the dormitories at the university."—Ralph D. Goodrich, Dean.

University of Alabama, University, Ala.—"While we have not publicly closed enrollments, we do face the necessity of declining to accept a number of applicants simply because we do not have the facilities to accommodate all who are seeking admission.

"We are continuing to receive applications, but we are not encouraging students to apply if they live some considerable distance from Alabama. Our primary responsibility is, of course, to Alabama applicants."—Ralph E. Adams, Dean of Administration.

Princeton University, Princeton, N. J.—"We cannot take more students.

"Everything is crowded.

"No refresher courses, several new courses."—Philip Kissam, Department of Civil Engineering.

Massachusetts Institute of Technology, Cambridge, Mass.—"In the graduate school additional admissions June 17 and Sept. 30 will be few and on a highly selective basis. No additional transfer students can be accepted unless they have already advanced to the point where they can enter the latter half of the third year. An entering class of less than 100, all veterans, will be accepted in June, and some in the September class. We may not be able to accept more than about 10 percent of the applicants in June and September.

"We are planning to increase the number of students accepted at each class level by about 50 percent, which is all that we can possibly do and maintain satisfactory standards.

"For married veterans, a temporary emergency housing development of 100 units has been constructed on institute land, and a housing bureau has been established to aid such students in obtaining quarters in the Boston area. For single students some doubling up has been arranged in the Graduate House and undergraduate dormitories, but some of these men will have to have recourse to rooms in the vicinity.

"Regular subjects will, in the main, serve as refresher course for students returning beyond the entrance level. Some new undergraduate curricula and new subjects have been added representing the normal evolution and not primarily for the benefit of returning veterans."—Edward L. Moreland, Dean of Engineering.

(To be continued)

Price increases for steel supplies are authorized in new OPA orders

Structural shapes and piling increased 25c per 100 lb.; pipe and tubular goods from $5 to $6 per ton—OPA sets up construction unit

In keeping with the average increase of $5 per ton in steel mill ceiling prices granted recently by the Office of Price Administration, price increases have been authorized by that agency for numerous steel supplies used on construction.

The price rise amounts to 8.2 percent in the average realized price of all steel.

Warehouses and jobbers have been instructed that they can pass the increased cost along to their customers. This authorization, therefore, will result in the consumer finally bearing the added costs, rather than some of it being absorbed in distribution channels.

Mill ceiling price increases are applicable to sales of a long list of both prime and secondary quality carbon-steel products. They include the folowing: Structural steel shapes and piling, 25¢ per 100 lb.; concrete reinforcing bars—all types and grades—20¢ per 100 lb.; nails and staples of all types and finishes, 35¢ per 100 lb.; rails, all types except light rails, $5 per net ton; light rails, $9 per net ton; track spikes, 40¢ per 100 lb.; and splice bars, 15¢ per 100 lb.

Other authorized increases for carbon-steel products on a 100-lb. basis are: Plates, all types and grades, 25¢; tie plates, 25¢; wire fencing, 25¢; and cold-finished bars, 35¢.

A number of increases were also granted for carbon and alloy steel supplies. These include: Buttweld and lap-weld pipe and oil country tubular goods, $6 per net ton; electric weld and seamless pipe, $5 per net ton; all carbon and alloy steel tubing (other than oil country tubular goods and carbon steel pipe), 6.6 percent on hot-finished products, 9.9 percent on cold-finished products, and 8.2 percent on applicable maximum extras and other changes; and steel screen wire cloth, 8.2 percent.

Other rises also granted

Amendment 22 to Revised Maximum Price Regulations 26 granting price increase for softwood lumber of all grades of Douglas Fir was authorized to encourage the production of lumber items needed for residential construction. Price increases granted by this order on a per 1,000 bd. ft, basis include: Dimension lumber, $3.50; plank and small timbers, $2; flooring, $5 on all 5/8-in. items, and $10 on all other thicknesses; drop siding and rustic, $5 on all 5/8-in. items and $10 for other thicknesses; ceiling, $5 on 5/8-in. and thinner items and $10 on 1-in. items; and an average increase of $10 for shop lumber, which is used extensively in the manufacture of doors.

Other price increases authorized include: Southern Pine Lumber, up $3.25 per M, throughout the U. S.; Portland Cement, up 20 cents per bbl., in southeastern states, and vitrified clay sewer pipe, up 6½ percent in Northern California. Other recent price increases were listed in *ENR* Feb. 14, vol. p. 252.

Some price decreases are also required by Amendment 22. These are: Finish and clears, decrease of $5 per 1,000 bd. ft. on all vertical grain 4-in. material and 8-in. flat grain and narrower widths; and thick clears, decrease of $5 per 1,000 on 3-in. and 4-in. thick vertical grain material 4-in. wide and 3-in. and 4-in. thick flat-grain 8-in. wide and narrower. Copies of amended order RMPR 26 can be obtained from OPA regional offices.

To carry out OPA's responsibility in the federal housing program now being planned, that agency has established a building and, construction price division. Gordon Rieley, of Cleveland, Ohio, has been named director of the new organization. The nucleus for the new division will come from the building materials branch of the OPA's industrial materials division, which formerly had jurisdiction over pricing in the building field.

The new division takes over the pricing of most building materials and prefabricated building equipment. It also will control prices of lumber at the distribution yard level. More specifically the division will be concerned with the pricing problems of masonry materials, roofing, insulation materials, millwork, mechanical equipment, builders' hardware, plywood, stock screen goods, mouldings, mechanical building equipment and prefabricated items as well as contract services and installed sales for the materials and units named.

In passing the Patman housing bill the House gave Administrator Wyatt of the National Housing Agency power to control the price of materials needed for housing work in order to expedite this type of construction (See page 1.)

Grant broad powers to housing chief

(*Continued from first page*)

be asked to put back the fund for subsidies, as well as authority to control the selling price of existing homes. The Senate is considered more receptive to these provisions. However, the House vote against these provisions was so pronounced that it is doubtful if the House could be induced to reverse its decision on these two features.

Other developments in Washington last week pertaining to housing included the announcement by NHA that seven regional housing expediters had been named by Administrator Wyatt. These men will be located in Boston, New York, Chicago, Atlanta, Dallas, San Francisco, and Seattle. At the same time, Wyatt announced the appointment of Neil Dalton as Deputy National Housing Expediter, in charge of community action on housing. During the war, Mr. Dalton was director of the domestic branch of the Office of War Information.

The Federal Housing Administration, a division of the NHA, announced that it would undertake immediately a broad cooperative program to stimulate reconstruction as a means to provide more housing for veterans. According to Commissioner Foley of the FHA, the remodeling program is aimed at assisting in the conversion of warehouses, business buildings and other non-residential structures into dwelling units.

Other developments of the week included an announcement by the Department of Labor that private builders started $22,000,000 more urban housing construction in January than in the preceding month; the value of urban building construction of all types totalling $301,000,000. This increase was attributed to the impetus received from the HH priority aid under Priorities Regulation 33, which went into effect Jan. 15 (*ENR* Jan. 10, vol. p. 13). The Bureau of Labor Statistics reported that in January the value of private commercial and industrial building started in urban areas in January fell off $24,000,000. after climbing continuously since V-E day.

The CPA reported that more than 100,000 dwelling units were authorized in the first six weeks" operation of Priorities Regulation 33. Materials to which HH ratings under PR-33 now apply are: Common and face brick, clay sewer pipe, structural clay tile, gypsum board and lath, cast iron soil pipe and fittings, cast iron radiation, bathtubs, lumber, millwork and concrete blocks.

Almost 68 percent of the rental units approved through March 1 by the FHA, which acts as processing agent for the CPA on applications for HH ratings for these building materials, are for rentals under $60 a month. About 50 percent of the units to be built to sell are priced at $7,500 or less.

Cities study new codes for emergency housing

Anticipating the effect of the current pressing need for housing as pointed up by the government's recent proposal for construction of homes for veterans, many cities now are considering extensive revisions to building codes to permit construction of the new type of emergency housing.

At Chicago, city councilmen considered an emergency housing code that would, among other things, permit construction of "factory built" homes or prefabricated structures.

As drafted by the city council's building and zoning committee, the new code would permit construction of various types of homes now barred within the "fire limits" of the city. At present, only brick and mortar may be used in those areas, comprising most of the space within the city limits. Additionally, the code would revise and bring up to date the defense housing rules that were made part of the city's laws in 1942, open the way to use of factory-built homes provided designs are approved by the city's committee of standards and tests; and fix new standards for finish on interior walls which were limited to conventional plaster by the city's old code.

At Milwaukee, Wis., the city planning commission started an extensive rezoning survey that will, in addition to providing eased rules for housing, vitally affect the growth of the city's industrial district.

The commission set itself to correct errors of an earlier zoning law, made "in the midst of a psychology of unlimited expansion."

Simplified practice for copper and brass pipe

A simplified practice recommendation for copper water tube and copper and brass pipe has been approved for promulgation, according to an announcement of the Division of Simplified Practice of the National Bureau of Standards. It is effective from March 15, and will be identified as R217-46.

The recommendation covers copper water tube and copper and brass pipe intended for plumbing uses. It establishes as a useful standard of practice in the production, distribution, and use of these items, a simplified list of types and sizes.

Until printed copies are available, free mimeographed copies may be obtained from the Division of Simplified Practice, National Bureau of Standards, Washington 25, D. C.

Senate approves $250,000,000 for NHA

While major attention last week regarding the housing legislation was drawn to consideration of the Patman Bill (H.R. 4761) by the House, the Senate quietly passed a bill (S. 1821) authorizing the appropriation of $250,000,000 for the National Housing Agency to move 100,000 temporary war housing units. These wartime structures will be moved to sites where homes for veterans are needed.

This money would be in addition to the $191,000,000 provided late last year for similar work (*ENR* Dec. 27, vol. p. 849). The latter fund is now being used for dismantling and reconstructing 75,000 temporary war housing units and 25,000 dormitory dwelling units at new sites.

New construction wage rates for Arizona

The Wage Adjustment Board has approved the Arizona general contractors' agreement, which will cover about 95% of all construction work done in the state of Arizona. This A.F. of L. agreement by its new wage scales will bring Arizona up to the Southern California level. The new rates were effective Feb. 15, 1946, on all work; and retroactive to Feb. 1, 1946, only on work contracted after Jan. 1, 1946. The agreement was first approved by the labor committee of the A. G. C. headed by P. W. Womack, and a negotiating group of the A.F. of L. headed by A. E. Williams.

The new key construction scales are: Common laborer, $1.00 per hour; carpenter, $1.625 per hour; cement finisher, $1.625 per hour; iron worker, $1.625 per hour; heavy duty repairman, $1.55 per hour; tractor operator, $1.55 per hour; bricklayer, $1.85 per hour; plumber and steamfitter, $1.75 per hour; roofer, $1.43 per hour; sheet metal worker, $1.50 per hour; distributor truck driver, $1.25 per hour; warehouseman, $1.00 per hour.

Plumbers get raise

A report from Memphis, Tenn. says that the new pay scale for plumbers of that city will be $14.40 a day and will be $15.40 next year.

Twenty-five contractors and plumbing shops in Memphis have signed the new agreement, which will affect about 200 plumbers. Present pay scale is $1.62½ an hour for an eight-hour day. The rate is subject to approval of the Wage Adjustment Board at Washington.

Price control issued for prefabricated work

The Office of Price Administration has issued a new order setting up formulas for computing the sale prices of prefabricated housing made principally of wood. Designated Maximum Price Regulation 606, the new order permits an upward price adjustment of from 10 to 36 percent in the ceiling prices of prefabricated housing work.

The order permits prices to be computed all the way from f.o.b. factory to completely installed units. The factory price is set by adding materials at allowed ceiling or actual price, whichever is lower, and the cost of direct labor at approved rates plus a mark-up of 36 percent. This mark-up is considered sufficient to cover overhead, taxes, indirect labor costs and profit.

Installed ceiling prices are computed by adding to the approved f.o.b. factory charges a 10 percent handling charge and the actual cost of transportation to the site, as well as other direct material and labor costs at ceiling prices, plus 10 percent. The order became effective Feb. 25.

Minnesota unions oppose prefabs

Members of the Minneapolis, Minn., Building Trades Council, AFL, have voted not to erect prefabricated houses nor to work in mills where they are made.

A year ago Duluth unions prevented the building in that city of 500 prefabricated houses intended for England, but the policy of the Duluth building trades unions at present affects only manufacturers.

The Minneapolis policy, however, is said to mean that anyone in that city who buys a prefabricated house for delivery in the early summer—when manufacturers are planning to get into mass production—will not be able to put it up, and a manufacturer of prefabs cannot get union help.

New officers of AWWA confirmed by vote

Officers of the American Water Works Association have been elected as follows: President, Wendell R. LaDue, chief engineer of the Akron, Ohio, Water and Sewage Bureau; vice-president, N. T. Veatch Jr., consulting engineer of Kansas City, Mo.; and treasurer, William Brush, editor of *Water Works Engineering*.

The nominations were made at a meeting of the directors of the association in New York City Jan. 15, and the mail balloting has just been completed.

DEVELOPMENTS BEYOND U. S. BORDERS

Digested from reports by Engineering News-Record correspondents and the McGraw-Hill World News Bureau

Peru, Chile, Argentina plan major railroad work—Holland to spend $400 million on housing—Salvage huge floating drydock in Ceylon

Seeking to tap rich areas of their countries, and to improve international communications, three South American nations have announced plans for major railroad construction work. One of the jobs—a new connection between Chile and Argentina—will include a trans-Andean tunnel that will be the longest railroad bore in the world.

The Peruvian senate meantime, is considering a bill providing for the appointment of a commission of engineers to carry out studies for construction of a 600-mile railway line that would run northward from Cuzco, along the valley of the Urubamba River and to a terminal at Iquitos. This project is estimated to cost $15,000,000.

Peruvians believe that the country traversed by the new road is rich in oil, rubber, gold and timber, and contains large areas of potentially productive farmland that could be brought under profitable cultivation once rail transport is provided.

Extensive aerial surveys of the area already have been carried out, and a start on railway construction—a 60-mi. line between Cuzco and Machu Picchu—has already been built.

New Argentine-Chile connection

Engineers for the Chilean and Argentine governments recently concluded a series of survey trips and consultations at Buenos Aires and Santiago de Chile, and drew up preliminary plans for a new trans-Andean rail link between the two countries that would include an 18-mile rail tunnel driven through the mountains at an elevation of about 7,000 ft. above sea level.

Three plans for the tunnel have been drawn, all calling for an expenditure of more than $20,000,000. The tunnel would start at the village of Quebrada Navarro, Chile, and debouch at Puente Enca, Argentina. Initial plans call for construction of either a single-track railway line, with room for a double-lane truck highway, or a double-track line through the tunnel.

If constructed, the tunnel would be the longest railroad bore in the world, its 18-mile length comparing with the present record-holder, the Simplon Tunnel in the Swiss Alps, which is 12.3 miles in length.

Engineers for the two countries said they would present their recommendations to their respective governments for action shortly.

Throughout the world, governments and private organizations are turning rapidly to the varied engineering works—deferred by wartime necessities or to be replaced after being damaged by actual warfare—that will make possible their peoples' continued progress, health and safety. Among the recent developments reported to *Engineering News-Record* are:

Reconstruction . . . . .

Holland—Faced with the virtually complete destruction of much of its housing and industrial plant, Holland has announced plans for reconstruction work that envisages importation of huge quantities of materials, and the expenditure of about $400,000,000 on housing repair alone.

Johannes A. Ringers, Dutch Minister for Public Works and Reconstruction, said the government plans for reconstruction of between 60,000 and 70,000 homes annually, and repair and rehabilitation of 300,000 homes damaged by the war. He said that of 1,000 Dutch municipalities, 150 were at least partially devastated, with 85,000 houses completely destroyed, 270,000 damaged.

Lack of construction materials—particularly cement and glass—will limit the program during 1946. As an indication of conditions, Mr. Ringers said that the country will have to import 3,000,000 sq. yd. of glass in 1946. Dutch production of cement—normally supplemented by importation of about 1,000,000 tons annually—is now only 30,000 tons per month, and the country's brick industry is operating at about 30 percent of capacity.

Other Dutch reconstruction plans include the $570,000,000 task of rebuilding Rotterdam, the new city to contain a central heating plant, new port facilities, and underground parking facilities.

England—Taking advantage of the opportunity for complete reconstruction offered by blitz-wrecked areas, the City of London has already let several contracts to start a 30-year rehabilitation program for its Stepney and Limehouse slum districts. The plan, similar to others being prepared for other sections of the city, and by some other cities in the country, will eventually result in parked areas, with ample space for greenery, schools and recreation areas between uniform, modern dwelling units.

Venezuela—Venezuela's postwar building program—both publicly and privately financed—is reaching the proportions of a boom, reports from Caracas indicate.

Biggest new job considered is a $53,000,000 refinery for the Creole Oil Co., a 2-year project that will, when completed, turn out 40,000 barrels of petroleum products a day. Other jobs, in addition to extensive street-widening and improvement programs in Caracas and Maracaibo, include an $11,000,000 federal program by the ministry of public works to aid communities in construction of improved water supply, sanitation, irrigation works, and highways.

Highways . . . .

Switzerland—The 30-mile Susten Road over the Alps near Lucerne, under construction for eight years, will be opened formally to traffic this summer. Construction crews are currently finishing paving of the 20-ft. roadway.

The Susten Road—first ever built in the Alps expressly to meet the requirements of motor vehicles—is said to be one of the most difficult engineering projects ever tackled by Swiss builders. The highway climbs a full 5,000 ft. to a tunnel at 7,000 ft., and then drops 4,200 ft. on the other side.

Geographically, the road connects the Bernese Oberland and the Reuss Valley through Susten Pass. The road is reached from Lucerne via the Brunig Pass, or from Interlaken.

The tunnel, about 1,000 ft. long, crosses the highest point on the highway. Engineers were able to keep the road gradient at a maximum of eight percent, increasing to a little over nine percent at difficult points. Curves have a minimum radius of 60 ft., and a transverse slope of 12 per cent.

Puerto Rico—Puerto Rican legislators considered legislation to confirm the acceptance by the island's government of a federal grant of more than $3,000,000 during each of the next three years for improvements and new construction work on principal and secondary roads.

Guatemala—Surfacing of the Guatemalan section of the Inter-American Highway is now under way.

Irrigation . . . . .

Australia—Plans for what would be one of the largest single engineering projects ever undertaken in Australia—providing for the expenditure of $27,132,000 on enlargement of the Eildon Weir earth dam in Victoria State—have been placed before the state government by its Rivers and Water Supply Commission.

The Eildon Weir Reservoir, on the Goulburn River, would be enlarged from its present 306,000 ac-ft. to 2,235,000 ac-ft., the enlargement work making the structure one of the largest earth dams in the world. Leslie W. Galvin, water supply minister, said plans call for addition of an embankment 250 ft. high and 2,300 ft. long, with a total fill of more than 13,000,000 cu. yd.

The state government approved plans to permit a group of engineers to visit the United States for consultation with American construction men.

Mexico—The National Irrigation Commission said it would invest $5,565,000 in major irrigation works in Sinaloa State and in the Laguna district—the nation's greatest cotton-growing section—during the coming year. In the Laguna district, the work will take the form of numerous small dams and canals to aid existing irrigation projects, while one major dam is planned for construction in Sinaloa.

Visitors . . . . .

Names of 21 young engineers from fifteen Latin-American republics who will receive a year's training in highway construction methods in the United States under the Inter-American Highway Training Award were announced recently by James J. Skelly, chairman of the award committee and president of the American Road Builders' Association—sponsoring the training program. The program will open at Washington, D. C., April 8.

Salvage . . . . .

Ceylon—In what is termed the biggest salvage operation ever tackled in the Indian Ocean, engineers of the Indian Royal Navy have succeeded in refloating a 50,000-ton capacity floating drydock, which capsized and sank in the harbor of Trincomalee in 1944. Built entirely of Indian-made steel in Bombay, the 845 ft. long, 173 ft. wide, 75 ft. deep drydock was equipped with American machinery.

It took eight months to raise the great dock. Divers with specially-designed air hoses had to tunnel through 17 feet of gelatinous mud to break the suction that held the dock fast. Some 2,500,000 cu. ft. of air was pumped in to displace water in the tanks.

The dock sank in August, 1944, during the berthing of the British battleship "Valiant". An error in a pressure gage—which showed one of the forward tanks as full when it was really empty—led to the accident, investigations showed. With the 35,000-ton battleship inside, the dock listed, and went down when one of the ship's huge propellors punctured sidewalls.

The battleship was not damaged seriously by the accident.

Ports and Harbors . . . . .

France—The French government announced the arrival at Le Havre of three 2,000-ton Canadian-built dredges, after an 88-day tow across the North Atlantic. The dredges will be used to speed the full opening of the war-battered harbor.

Recent reports as to the amount of tonnage passing through various French ports emphasizes the continuing value of port facilities built by American military forces during the war. The most striking figures are from Cherbourg, where in October, 1945, 64,465 tons were unloaded, as compared to 21,200 tons in October, 1938. Prior to the war, Cherbourg was principally a passenger port, but American Army engineers greatly expanded its freight handling capacity.

No other French port is up to its pre-war capacity, but the principal ones are handling sizable tonnages. For example, comparisons between the months of October, 1945, and October, 1938, show that Le Havre unloaded 189,000 tons as against 355,000; Rouen unloaded 183,000 tons against 550,000 tons, and Marseille unloaded 369,000 tons against 555,000 tons.

Housing . . . . .

Mexico—The government of the Federal District, which includes Mexico City, will spend $8,000,000 per year to finance construction of low-cost housing for occupancy by poorer classes. Construction of the first unit started March 1.

Denmark A thousand Swedish-built prefabricated houses were recently erected on Klovermarksvejen Airfield on the outskirts of the city of Copenhagen, after being shipped in a mass movement that occupied 62 steamers and 850 railway cars.

The Danish government has ordered another 560 of the houses.

Venezuela—The Venezuelan government's Workers Bank has authorized funds totalling $23,000,000 for construction of some 4,000 homes for middle and working class citizens.

Port works in Peru nearing completion

Simplicity and flexibility characterize the coal storage and handling facilities (foreground) at the Chimbote Bay, Peru, port works now nearing completion by the Frederick Snare Corp. of New York. The design was made by W. A. H. Grantz, Lima, manager of the company.

The structure consists of an 840-ft. concrete tunnel gallery on either side of which there is sloped sand fill. Coal cars operating on top of the fill are dumped into the V-shaped storage space between the two fills.

When it is desired to draw coal for shipment, small cars are moved into the tunnel gallery, which is under the base of the V, and coal may be released from any part of the pile through chute holes in the tunnel roof. The tunnel is of an inverted U-shape with 11 ft. side clearance and a height to the top of 11.6 ft. The storage pit has a capacity of 40,000 tons (For details see ENR, Sept. 21, 1944, vol. p. 360).

New interest in 26-mi. Tehachapi bore

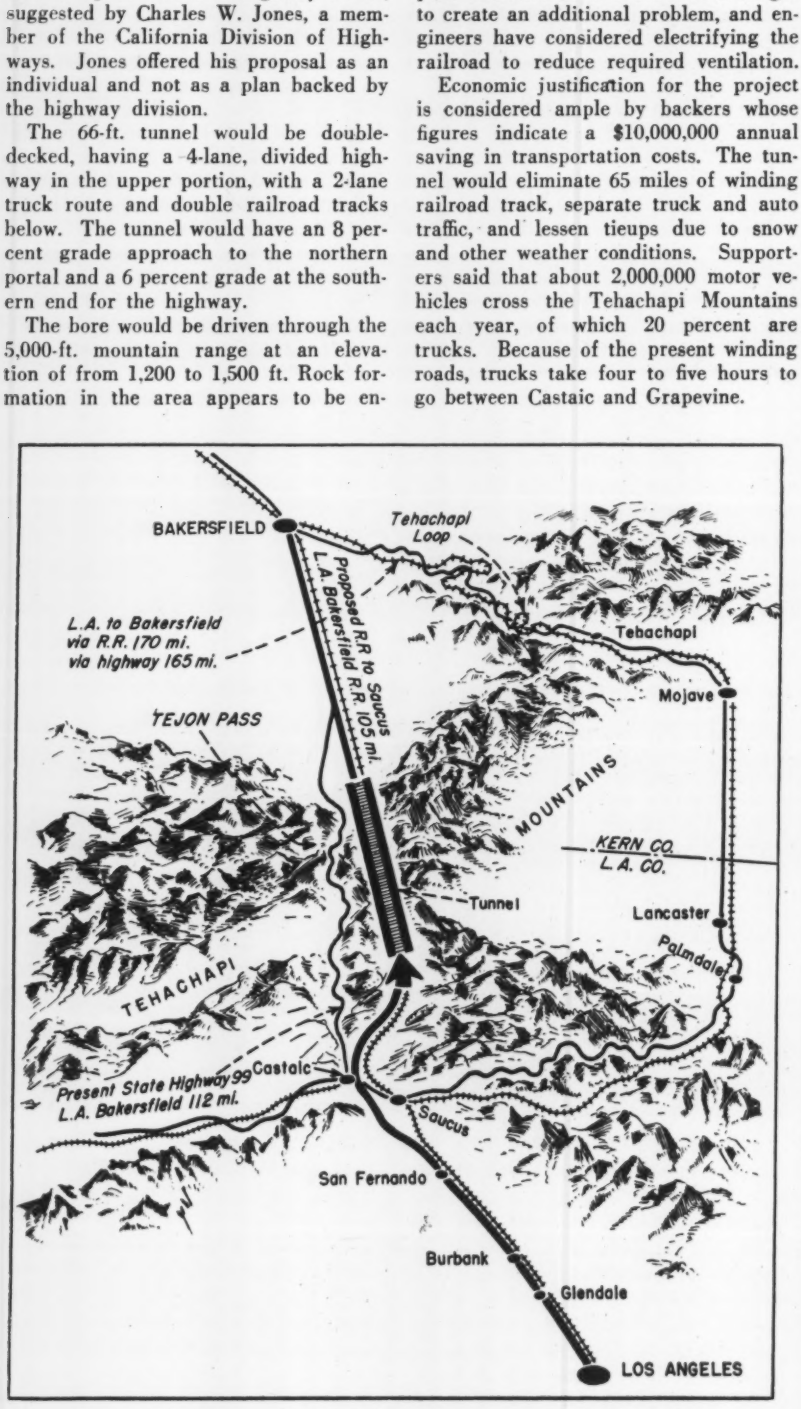
The California Department of Public Works now has under consideration a resolution from the state assembly requesting a survey of the feasibility of the proposed 26-mi. tunnel through the Tehachapi Mountains, between Bakersfield and Los Angeles.

Passage of the resolution by the state legislature was credited to a well-publicized plan to eliminate traffic hazards and to speed rail and highway travel, suggested by Charles W. Jones, a member of the California Division of Highways. Jones offered his proposal as an individual and not as a plan backed by the highway division.

The 66-ft. tunnel would be double-decked, having a 4-lane, divided highway in the upper portion, with a 2-lane truck route and double railroad tracks below. The tunnel would have an 8 percent grade approach to the northern portal and a 6 percent grade at the southern end for the highway.

The bore would be driven through the 5,000-ft. mountain range at an elevation of from 1,200 to 1,500 ft. Rock formation in the area appears to be entirely granite. Engineers have said that all work would have to be accomplished through the two portals, with the aid of pilot tunnels. Faults and rifts are thought to create an additional problem, and engineers have considered electrifying the railroad to reduce required ventilation.

Economic justification for the project is considered ample by backers whose figures indicate a $10,000,000 annual saving in transportation costs. The tunnel would eliminate 65 miles of winding railroad track, separate truck and auto traffic, and lessen tieups due to snow and other weather conditions. Supporters said that about 2,000,000 motor vehicles cross the Tehachapi Mountains each year, of which 20 percent are trucks. Because of the present winding roads, trucks take four to five hours to go between Castaic and Grapevine.



Proposed tunnel would cut miles and danger from California roads

John L. Savage now on Palestine assignment

John Lucian Savage, the engineer who designed the Bureau of Reclamation's Grand Coulee and Boulder Dams, and more recently blueprinted the Yangtze Gorge Project for China, left March 1 for Palestine to appear before the Anglo-American Commission in Jerusalem. James Buchanan Hays, who is chief engineer for the commission, on Palestine surveys has spent about two years in studying and mapping the projects and is with Mr. Savage.

Mr. Savage will outline technical plans for water-resource development for the Holy Land based on a report which he prepared last year. On loan to the State Department as a specialist under its Cultural Cooperation Program, the former chief designing engineer for the Bureau of Reclamation spent 14 months in the Far East in 1944-45.

In addition to special studies of irrigation and hydroelectric power development projects which he made in China, India and Afghanistan, Mr. Savage spent several weeks in Palestine, where he examined sites proposed for irrigation and hydroelectric development

Bureau of Reclamation sets up a new district

A Central Snake River District of the Bureau of Reclamation has been established by R. J. Newell, regional director, with headquarters at Boise, Idaho. The district, of which George N. Carter will be manager, embraces the Boise Project in Idaho, and the Owyhee, Vale, Baker, and Burnt River Projects in Oregon. It will be under the jurisdiction of the Region I office of the Bureau. Five additional districts within Region II will soon be established.

The Central Snake River District will be responsible for construction, operation and maintenance activities, power, project planning, and administration of Bureau functions affecting the area. All the new districts will be set up along natural river sub-basin lines. The Central Snake River District includes the main stem of the Snake River from Lewiston, Idaho, to Bliss, Idaho, and basins of the following tributaries: Salmon, Burnt, Malheur, Payette, Weiser, Owyhee, Boise, and Bruneau.

George H. Carter, manager of the newly-created district was formerly head of the Boise Bureau of Reclamation planning office.

He first came to Idaho in 1908 to work on the Twin Falls-Oakley irrigation project.

Construction to start on San Diego water plant

With $2,000,000 voted for a water treatment plant last April in San Diego, Calif., plans are being rushed to start construction.

When the San Diego aqeduct, which will bring Colorado river water to San Diego via the Metropolitan Water District system, became a certainty (*ENR* Oct. 25, 1945, vol. p. 547), steps had to be taken to treat the hard water of the river. G. E. Arnold, assistant city engineer and water purification specialist, said the new plant will have a capacity of 66 mgd., which can be expanded to 100 mgd. when needed.

Water will enter the plant from settling tanks, thence into the softening and filtering units. The feature of the plant's design is the centralization of controls to reduce labor involved in maintenance and operation.

The structure, featuring Spanish style architecture, will be built in Alvarado Canyon.

Many college buildings planned for Minnesota

Building plans that would call for expenditure of $20,000,000 within 10 years are being considered by 14 colleges in Minnesota. Dean M. Schweickhard, state commissioner of education, said such a building program is necessary because of a 4-year recess on school building construction; free education is extended to thousands of veterans by the GI Bill of Rights and the general stimulus given education by the free schooling offered veterans.

Minnesota junior and senior college enrollment in 1944-45 was up to 160,000, and may pass the 300,000 mark in a few years. The result would be need for perhaps a 50 per cent increase in present college facilities in the state.

Projects totaling $20,227,000 are either just completed, now under construction or planned at these institutions: University of Minnesota, St. Catherines, St. Thomas, Concordia (St. Paul), Bethel Institute, Hamlin University, Macalester College, Carleton, Concordia (Moorhead), St. Olaf, St. Mary's, Bethany Lutheran, St. Benedict's and Gustavus Adolphus.

$13,000,000 public school program

A 10-year program of improving and building schools, costing an estimated $13,429,000, has been worked out by the department of education of St. Paul, Minn. it was announced Feb. 10 by Commissioner Fred M. Truax.

It is proposed:

To build 15 new elementary schools.

To build a new vocational high school, and one new academic high school.

To enlarge a number of existing elementary schools, to add auditorium or gymnasium facilities at 12 elementary schools, to provide shops and laboratories at seven elementary schools, to improve the physical education facilities at four high schools, and to build three stadia, shops, storehouse and garage, and a central field house.

Announce new personnel for VA building office

The Veterans Administration March 6 announced appointment of four men to top positions in its construction service. Announced at the same time was the retirement of L. H. Tripp, who headed the service since 1923.

John J. Rockefeller of Arlington, Va., formerly head of construction and supply for the New York branch office succeeds Mr. Tripp as chief of the organization. F. H. Dryden, who joined the VA Jan. 1 as director of real estate service, becomes assistant administrator, Construction and Supply service.

J. J. Rockefeller | F. H. Dryden

Other appointments are: Col. W. Z. Bowie, director of real estate service, and R. S. Poole, assistant to Mr. Dryden.

TVA engineers leave for India and Brazil

Three members of the Tennessee Valley Authority's technical staff are scheduled to leave shortly to consult with the governments of India and Brazil on water control developments.

F. C. Schlemmer, project manager of TVA's Fontana Dam, and Ross M. Riegel, civil engineer in the authority's design department, will be sent to India, to advise the Indian government on the Damodar Valley project.

Oren Reed, Fontana Dam construction engineer, will aid the Brazilian government in investigations on a large hydroelectric development on the Sao Francisco River, fourth largest river in South America.

War Assets Corporation to handle surplus

By executive order President Truman has transferred all functions of the Surplus Property Administration, except for property outside the continental U. S., to the War Assets Corporation. The State Department has been placed independently in charge of surpluses outside the country. On March 25, the War Assets Corporation will be succeeded by a War Assets Administration.

This new agency will be separated from the Reconstruction Finance Corporation and headed by an administrator and made part of the Office for Emergency Management of the Executive Office of the President. The new agency thus will become a separate organization under the supervision of the President. Lt. Gen. Edmund B. Gregory, chairman of the War Assets Corporation, has been nominated Administrator.

New expressway program proposed in Kentucky

Authority for establishing express routes to relieve congestion on highways would be given in a bill introduced recently in the Kentucky legislature.

Under the bill, highways or streets could be designated for through traffic or new ones constructed, or parts of routes put under the plan by the State Highway Department, or by cities, counties, towns and villages. Existing highways might be divided by curbs or signs so as to restrict part of them to through traffic.

The Highway Department and local highway authorities would have the same rights to acquire land for the through-traffic routes, by gift, purchase or condemnation, as it now has in connection with the future development of unrestricted routes.

Chicago—Governor Dwight H. Green of Illinois has declared the state is ready to enter into agreements with Cook County and the city of Chicago for the joint construction of two additional major express highways in the metropolitan area.

On Feb. 23 the governor urged on the proposed new Northwest highway and the extension of Wacker Drive to connect with the already projected Congress street express highway development program.

The Northwest highway would be an express route from the Chicago loop through the northwest section of the city, and would provide direct and swift access to the new Douglas airport.

A new generation succeeds: Seated at left is STETSON G. HINDES, who retired in 1938 as president of the San Francisco Bridge Co., and his successor, F. R. MUHS, who retired recently. Standing, left, is F. R. MUHS, JR., now vice-president, and BARRETT G. HINDES, now president of the organization. The company is one of the oldest contracting firms on the West Coast.

Above: J. M. RICHARDS (left) project engineer, dons working clothes to inspect cast iron pipe at Oklahoma City, Okla., with KENNETH KLAFFKE, chief draftsman. Both men are employed by the V. V. Long Co. on work incident to construction of a new 15 mgd. filtration plant for the city.

Above: FRED R. WHITE (left) chief engineer for the Iowa State Highway Commission, and W. W. MACK, chief engineer for the Delaware State Highway Department, were among the nine past presidents of the American Association of State Highway Officials who attended recent meetings at Oklahoma City.

At ceremony in Chicago, LT. GEN. R. A. WHEELER (left) presented the distinguished Service Medal to COL. HARRY A. MONTGOMERY, for his services as division engineer at Chicago during the last two years. COL. HENRY J. WOODBURY, Chicago (third from left) and COL. McDONALD D. WEINERT, Milwaukee, Wis., received Legion of Merit awards.

MEN AND JOBS

Francis B. Milligan has been named principal sanitary engineer in the Bureau of Sanitary Engineering, of the Pennsylvania Department of Health, succeeding Christian L. Siebert. **Henry J. Baum**, former city engineer of Altoona, has been appointed advanced sanitary engineer in the bureau.

Appointment of **James Gary Lindley** as Chief of the Regional Branch of Operation and Maintenance, U. S. Bureau of Reclamation has been announced at Sacramento, Calif.

Edward L. Booth has been named city engineer of Bismarck, N. D., following the resignation of **Maj. Adrian Taylor**, who has joined the Bureau of Public Roads and will continue to live at Bismarck.

F. J. Bishop, for 18 years engineer of maintenance of the Toledo, Ohio, Terminal Railroad, has resigned to become chief engineer of the Akron, Canton & Youngstown Railroad.

Marshall Young, superintendent of the Bureau of Reclamation, Colusa, Calif., office for the last few months, has been transferred to Chico to supervise operation and maintenance in the Sacramento Valley District.

He will be assisted in Chico by **Albert W. Plummer**, just returned from two years with the Seabees.

Brig. Gen. W. A. Danielson is retiring from the Army after 35 years. He has been commanding general of the Memphis, Tenn., Army Service Forces Depot.

A. M. Young, who has been serving as district highway engineer with headquarters at Pierre, S. D., has been promoted to assistant construction engineer.

For having completed at least 25 years of service with the Illinois division of highways the following engineers have been awarded certificates of merit by the American Association of State Highway Officials: **G. H. Baker, G. F. Burch, E. D. Dryfoose, W. M. Dutelle, V. L. Glover,**

M. Hathaway, L. H. Hendrick, H. B. Jay, E. R. Knight, J. M. McCoy, C. W. Ross, H. E. Surman, R. T. Cash, O. F. Goeke, Theodore Plack, G. A. Somerville, C. M. Wahl, P. F. Jarvis, A. W. Wand, L. J. Hills, and C. H. Apple.

Paul E. Reinhardt, of Bazine, Kan., has resigned as civil engineer and draftsman with the Arkansas Valley Electric Co-operative association, at Hutchison, Kan., and will become a partner in the engineering firm of Rube & Reinhardt, Sante Fe, N. M.

Thomas D. Conn has been designated acting harbor engineer of Baltimore, Md. He has been deputy engineer in the Bureau of Harbors.

Col. Hubert W. Collins has assumed command of the Lathrop, Calif., Engineer Depot, succeeding **Lt. Col. F. S. McNamara.**

Maj. W. B. Akerley, of St. John, N. B., has been appointed senior highways superintendent of the Northwest Highway Maintenance Establishment, formerly known as Alcan Highway at Edmonton, Alta.

Lavern J. Hendryx has resigned as assistant engineer with the Ingham County, Mich., road commission to become county road engineer with the Case County Road Commission.

Robert Eastman has been appointed Clark County, Ohio, engineer. He served as chief deputy under Robert Dean, who died recently.

Dudley B. Menzies, chief engineer of the Alberta Health Department, has been named city commissioner of Edmonton.

Keith L. Baguley, who has been acting construction engineer in the Michigan State Highway Department's District No. 6, has been promoted to district construction engineer in the Saginaw area.

After seven years as Kittitas County engineer at Ellensburg, Wash., **Sam J. Dumbolton** has resigned to become assistant Spokane County engineer at Spokane.

W. H. Fisher, formerly with the Douglas Aircraft Corp., has been appointed city engineer at Muskogee, Okla., to succeed Brice Patrick, resigned.

Col. Charles E. McKee, deputy engineer, 5th Service Command, Ft. Hayes, Ohio, has retired. **Col. John H. Corruth,** former commanding officer for the Army Service Forces training center at Camp Claibourne, La., will succeed him.

Back to civilian activity

Bert D. Barber, lieutenant, USNR, is back in the engineering department of Ft. Worth, Tex.

L. W. Veigel, lieutenant, USNR, of Dickinson, N. D., has resumed as a consulting engineer, city engineer and county engineer for Dickinson and Stark counties.

Dye Barnhouse, Marietta, Ohio, recently released from the Army, has been named administrative assistant to Ohio Highway Director Perry T. Ford, he was assistant engineer in Ohio Highway Division Ten at Caldwell.

Paul Gardner, lieutenant colonel, Corps of Engineers, former Van Wert County, Ohio, deputy engineer, has been named to the newly-created post of Van Wert city engineer.

Francis J. Laverty, lieutenant colonel, has returned as civil engineer (sanitary) with the New York City Department of Public Works, and is chief of the sewage treatment section in the Bureau of Sewage Disposal.

Andrew J. Reynolds, discharged from the Army after 2½ years in the European theater, has started an excavating business at Toledo, Ohio, as the A. J. Reynolds Company.

Lief J. Sverdrup, major general, after 3½ years with the U. S. Army in the Pacific, has returned to Sverdrup and Parcel, consulting engineesr, St. Louis, Mo.

Frank Fisher, Jr., recently has resumed as chief engineer with Crawford Co., Chicago, Ill.

Herbert S. Riesbol, major, Corps of Engineers, will be Senior Hydrologic Engineer with the Bureau of Reclamation, Denver, Colo. and will be acting head, design flood section, Hydrology Division.

Newly added to the Indiana Flood Control and Water Resources Commission are **C. P. Baerman,** Indianapolis, field engineer, and **John W. Brumit,** Lafayette, office engineer. Both are veterans.

Donald Knoblauch, major, in the Army for four years, and a 1931 graduate in engineering, University of Illinois, has been appointed building inspector of Wauwatosa, Wis.

Willis Walker, major, Corps of Engineers, has resumed as district engineer for the State Highway Department of South Dakota at Huron.

Patrick T. McCarthy, Portland, Ore, colonel, Corps of Engineers, has been appointed assistant superintendent of the Union Pacific Railroad at La Grande, Ore.

Joseph B. Diamond, lieutenant commander, recently with the Seabees in the Pacific, has returned to private practice in New York City.

C. C. Davis, lieutenant colonel, Corps of Engineers, has joined the Portland, Ore., District Army Engineers as a civilian and has been appointed resident engineer on the Detroit Dam project.

Burdette Teig, captain, has been named consulting engineer for the planning commission at Waterloo, Iowa.

R. F. Long, major, Corps of Engineers, has returned to Oklahoma City, Okla., to become a partner with his father, **V. V. Long,** as consulting engineers.

Don Huff, recently released from the Navy as lieutenant (jg), has been appointed assistant regional officer for the Bureau of Reclamation at Billings, Mont.

W. O. Baxter, captain, Army Aviation Engineers, has been employed as an engineer in Marion County, Fla.

Albert W. Plummer, recently released from Seabee work with the Navy, and previously a U. S. Army Engineer on Central Valley flood projects, is now in the Chico, Calif. office of the Bureau of Reclamation.

Walter L. Dickey, commander, CEC, USNR, formerly of Los Angeles, has been appointed chief engineer for Erbentraut & Summers, general contractors of San Francisco and San Jose, Calif.

Charles S. McKinney, lieutenant commander, has been appointed chief engineer of the Sharon, Pa. Steel Corp.

Edward J. Scullen, formerly a lieutenant in the Seabees, has joined the faculty of the engineering department at Catholic University, Washington, D. C.

J. S. Kennoy, major, Corps of Engineers, has entered private practice at Lexington, Ky., to specialize on airport construction and maintenance.

E. H. Rausch, Jr., C. E., major and chief of the readjustment division, Seattle district U. S. Army Engineers, is returning to duty as a civilian in the same office.

Harry D. Lovering, lieut. colonel, Corps of Engineers, is again president and directing the Lovering Construction Co., St. Paul, Minn.

Plan $48 million expressway at Atlanta

Construction of a network of express highways totalling 32 mi. in length and expected to cost $48,000,000 has been recommended to eliminate traffic snarls in the twisted, narrow downtown streets of Atlanta, Ga.

Studies indicate that the present population of 300,000 will increase to 400,000 by 1970, and the population of the metropolitan area—now 500,000—will mount to 750,000 in the same period. Traffic flow is expected to go up 150 percent.

Both the State Highway Board of Georgia and consulting engineers have recommended the network of expressways shown in the accompanying illustration, widening of numerous streets, modification of the city's transit system (streetcars and buses) and provision of extensive off-street parking areas in the downtown section.

Six principal interstate routes would be built leading away from Atlanta; northeast toward Spartanburg, S. C.; northwest toward Chattanooga, Tenn.; west to Birmingham, Ala.; southwest to Montgomery, Ala.; southeast to Macon, Ga., and east to Augusta, Ga.

It is proposed to obtain rights-of-way about 300 ft. wide in order to landscape the routes as parks. Urban sections would be depressed where possible, but near the edges of the city, the parkways would be at street level, with grade separations at cross streets and railroads.

Four-lane expressways proposed

Each expressway would be built to provide a four-lane divided highway initially, and on some sections the bridges would be made sufficiently wide to permit a third lane to be built each way at a later date.

All groups are generally agreed that the plan now underway to convert the Atlanta street car system into a combination system of trolley and gasoline-powered buses should be carried to completion. Now well advanced it will also make feasible the plan to construct a central bus terminal in downtown Atlanta.

This terminal will be built over the tracks of the Western & Atlantic and Central of Georgia railroads between Forsyth and Broad streets. The terminal, which is estimated to cost $350,000, is expected to eliminate 300 bus loading and unloading operations daily on adjacent streets during the rush hours.

In addition to construction of the expressway network, it is proposed to widen several existing streets, to extend others, and to eliminate several existing grade crossings in downtown Atlanta.

In view of the money provided in the Federal Aid Highway Act of 1944, it is considered possible to finance readily a major start on the work. Because of the type of construction, much work could be started in a short time.

For the State Highway Board, George T. McDonald is director, Roy A. Flynt, is director of the division of highway planning, and he is assisted by T. D. House, is in charge of the planning studies. The board engaged H. W. Lochner & Co., Chicago, and DeLeuw, Cather & Co., Chicago, as consultants on the Atlanta studies, and they employed W. Earle Andrews of Andrews & Clark, New York, to assist in the work.

The Public Roads Administration is represented on the work by B. P. McWhorter, division engineer at Atlanta.

This aerial view of downtown Atlanta, Ga. (looking northwest) shows the proposed routes of a system of expressways planned to ease the city's growing traffic snarls. Route would be depressed to permit railroad lines as the one in the lower center, and city streets to by-pass without interference. Expressway route at upper right, leading to the north, parallels Peachtree Street, famous Atlanta downtown business thoroughfare.

Drinking water standards revised by USPHS

Superseding the "Drinking Water Standards" adopted by the U. S. Public Health Service in September, 1942, a new set of standards became effective with its publication Feb. 6 in the Federal Register. The American Water Works Association assured voluntary acceptance by its members of this 1946 revision as the standards for all public water supplies when its board of directors adopted a resolution to that effect at its recent annual meeting (*ENR* Jan. 24, vol. p. 101).

The revised standards are an outgrowth of the considerable concern expressed by municipal and state waterworks authorities as to the meaning and intent of certain statements in the 1942 standards, the rigidity of some of its requirements and the possible legal interpretation that might have been applied to the detriment of the water purveyor. An explanation of the U.S.P.H.S. policy on these questions was contained in an article published in the Nov. 30, 1944 issue of *Engineering News-Record.*

Greatest objection had been raised to the clause making the purveyor responsible for the system "from the source of supply to the free flowing outlet of the ultimate consumer". This section has been revised so that the purveyor's responsibility ceases at the connection to the customer's service piping, the owner and local authority being responsible from there.

One section clarified in the new standards is that dealing with the number of samples required. Also clarified is description of the chemical and physical characteristics of the water, including revision to permit 1.5 ppm. of fluoride, formerly limited to 1.0 ppm., and to limit the hexavalent chromium content to no more than 0.05 ppm. This latter provision is new to the standards.

Ontario to build road to Red Lake this year

A new 94-mile highway to give access to the isolated Red Lake mining district in northwestern Ontario, north of Lake of the Woods, will be built by the Ontario government during 1946, at an estimated cost of $2,750,000.

The new road will start at Quibell, on the main transcontinental line of the Canadian National Railways, and run approximately due north. A 24-ft. grade, with gravel surface, will be provided at first. A 9-mile road already connects Quibell with the trans-Canada Highway and the C. P. R. transcontinental line.

UNRRA acquires surplus Army Engineer machines

All of the surplus heavy engineering equipment remaining in the United Kingdom has been acquired by the United Nations Relief and Rehabilitation Administration, an announcement at London said last week.

Lt. Gen. Sir Humphrey Gale, chief of UNRRA's European operations, said March 7 that the organization had received more than 16,000 tons of the equipment, including: 342 mobile and 83 stationary cranes, 102 bulldozers, 101 road-scrapers, and 374 tractors. The machinery, Gen. Gale said, will be shipped to locations in Poland, Yugoslavia, Czechoslovakia, and Russia.

State Engineer Touhey of Arizona resigns

Bernard Touhey, for two years Arizona state engineer, has resigned effective April 1. Mr. Touhey announced he is leaving to engage in the private practice of engineering for enterprises in Arizona, New Mexico, and Texas.

W. C. Lefebvre, soon to be released from the Navy, has been appointed to take Mr. Touhey's place. He is a former state engineer and was chief engineer for the Public Works Administration for Arizona. He was also at one time the city manager of Phoenix.

New Cooper River span sought in S. C. assembly

Construction of a new bridge over the Cooper River, near Charleston, S. C., has been proposed to the general assembly by State Senator Oliver T. Wallace.

Senator Wallace decided to make the proposal after a freighter, periled by a recent windstorm, crashed into the $6,000,000 John P. Grace Memorial Bridge, now spanning the river and knocked out a 100-yard section of the two-mile long bridge, (*ENR* Mar. 7, vol. p. 327). The Grace span is the fifth longest in the world.

Mr. Wallace said the new bridge would not have to be of such spectacular proportions, nor would it cost as much as the Grace, but it would eliminate a lot of traffic bottlenecks on the Grace Bridge.

North Carolina bridge

Plans are in the final stage for a proposed $600,000 highway bridge across the French Broad River near Asheville, N. C., according to John C. Walker, division engineer of the North Carolina Highway and Public Commission.

The site of the new 1,200-ft. bridge has been set tentatively near the Reed quarry just below Smith's Bridge. The proposed bridge is designed to provide a 48-ft. roadway of four 12-foot traffic lanes and two 6-foot sidewalks. There will be ten spans, including five of 160-ft. each, two of 140 ft. each, two of 45 ft. each, and one span of 50 ft.

JOBS OF THE WEEK

WOLF CREEK DAM, Kentucky

U. S. Engineers, Nashville, Tenn., awarded a contract for constructing Wolf Creek Dam, Cumberland River, Russell County, to Jones-Wright Co., Charlotte, N. C., at $18,395,935.

RESIDENCES, Oakmont, Pa.

Beaston Construction Co., Philadelphia, Pa., will construct by separate contracts 200 residences at about $2,000,000. R. R. Neeley, Philadelphia, is the architect.

RESIDENCES, Willow Grove, Pa.

Corporation care of Henry Kuhn, Bustleton, Pa., will construct by own forces 400 residences. The estimated cost is $3,000,000.

AMMUNITION STORAGE, etc., McAlester, Okla.

J. A. Terteling & Sons, Inc., Kansas City, Mo., were the lowest bidders at $2,946,700 for additional ammunition storage, warehouse, roads, railroads, utilities, and a fire alarm system at the Naval Ammunition Depot when the Bureau of Yards & Docks, Navy Department, Arlington, Va., opened bids. DeLeuw & Cather, McAlester, are the engineers.

RESIDENCES, Norwood, Mass.

James T. Penning, Mattapan, Mass., will construct 1 and 2-story residences, Cleveland Park, for Gay Street Trust Co. and Cleveland Park Trust Co., Norwood, at about $1,750,000. Harry J. Korslund, Norwood, is the architect.

Note—Additional bidding and contract news on many projects large and small, including the above items, appear in the Construction News section beginning on page 17.

OBITUARY

Adolph Teichert, Sr., 91, founder of the general contracting firm of A. Teichert & Sons Construction Co. died Feb. 6 in Sacramento, Calif.

Clarence B. Fancy, 70, civil engineer, died Feb. 28 at Rochester, N. Y. Mr. Fancy had been associated with William S. Lozier, Inc., since 1922, except from 1928 to 1930 when he was a partner in the engineering firm of Fancy and Warren, working on the Monroe County park system. Early in his career, he was engineer with the Boston Park Commission. He later joined the engineering staff of the Boston Metropolitan Water District.

Marcus W. Lewis, 84, retired consulting engineer of the Office of the Chief of Engineers, U. S. Army, died March 2 at Hyattsville, Md. He was a civil engineer graduate of Ohio State University and Miami University, Ohio. After serving as civil engineer for Duluth, Minn., and Superior, Wis., Mr. Lewis entered government service in 1910 as consulting engineer, and served for 22 years. He was an authority on rivers and harbors engineering.

Benjamin A. Cook, chairman of the Niagara Falls Suburban Road Commission, and a building contractor who built the first sewage system and laid the first brick pavement in Niagara Falls, N. Y., died there Feb. 25. He had lived in that city for 65 years.

Clyde F. McKee, 40, construction engineer, died in Cleveland, Ohio, Feb. 27. He was a 1929 graduate of Carnegie Institute of Technology.

James E. Mackie, 47, western manager, National Lumber Manufacturers' Association, was killed in an automobile accident near San Francisco, Calif., Feb. 21. He was graduated from the University of Wisconsin with a B.S. in 1923, and received a C.E. in 1929. After service with the AEF in World War I, he worked for the Wisconsin State Highway Commission. From 1927 to 1929 he served as secretary of the Pacific Coast Building Officials Conference and had charge of work on the uniform building code.

Walter H. Metcalf, 47, Des Moines, Ia., contracting engineer for Pittsburgh-Des Moines Steel Co., died Feb. 19 while on a business trip to Helena, Mont. He was widely known for his activities in the water works field. Upon graduation from Iowa State College, Mr. Metcalf became associated with Pittsburgh-Des Moines Steel in 1922.

Edward Gray Taber, 90, at one time chief engineer for the Spokane International Railroad, died Feb. 19 at Spokane, Wash. A graduate of the Massachusetts Institute of Technology, he was a construction engineer and locator for the Northern Pacific when it pushed its transcontinental route from St. Paul to the Pacific coast in 1886.

Daniel R. Swem, 70, retired civil engineer, died Feb. 25 at Seattle, Wash. He was graduated in civil engineering from the University of Minnesota in 1896. He was assistant engineer on locations for the Northern Pacific Railroad in Minnesota from 1896 to 1904, when he went to Roslyn, Wash., as resident mining engineer for the Northwestern Improvement Co.

Ensign William Alfred Gillam, 30, a graduate of the University of Washington College of Engineering, died Feb. 23 in Seattle. Before the war he worked on Grand Coulee Dam and with the Army Engineers. He enlisted in the Navy last year and served on Guam with the Seabees.

Albert L. Scott, 67, president of Lockwood, Greene Engineers, Inc., New York City, died at Chappaqua, N. Y., March 2. He was a 1900 graduate of Brown University. He had been associated with Lockwood, Greene ever since then.

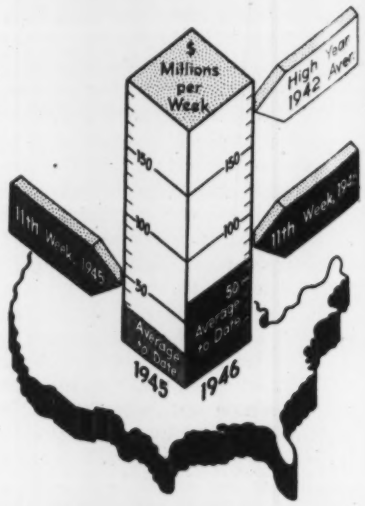
Arthur McFarland, 66, veteran civilian employee of the Corps of Engineers, U. S. Army, died Feb. 27 while at work in the Office of the Chief of Engineers, Washington, D. C.

Mr. McFarland was special assistant in the Rivers and Harbors Division, Civil Work, Office of the Chief of Engineers and was a member of the Board of Engineers for Rivers and Harbors.

He was graduated from Texas A. and M. in 1905 with the degree of civil engineer. He went to work for the Corps of Engineers at Galveston. Later he was stationed at Dallas, New Orleans and Galveston, being principal engineer on the latter two assignments. He joined the Office of the Chief of Engineers in 1935.

Richard Henderson Rivers, 63, a civil engineer for various railroads, died March 1 at Louisville, Ky. His first job as an engineer was in the construction of the Louisville-LaGrange electric railway 40 years ago.

CONSTRUCTION ACTIVITY



As Reported this week to ...
Engineering News-Record

CONTRACT VOLUME

Continental U. S. Only

(Thousands of Dollars)

	Week of March 7 1946	Cumulative 1946 (11 wk.)	Cumulative 1945 (11 wk.)
Federal	$6,862	$79,313	$184,049
State & Mun.	22,014	161,068	31,359
Total Public	$28,876	$240,381	$215,408
Total Private	45,893	499,059	103,939
U. S. Total	**$74,769**	**$739,440**	**$319,347**

WHERE CONSTRUCTION ACTIVITY ORIGINATED THIS WEEK

Type of Work	Dollar Volume (Thousands) This Week	Cumulative 1946 (11 wk.)	Cumulative 1945 (11 wk.)
Waterworks	$306	$11,050	$7,827
Sewerage	564	7,842	7,156
Bridges	1,659	18,758	6,918
Highways	12,734	87,033	13,827
Earthwork, Waterways	5,094	44,551	6,656
Buildings, Public	4,267	52,548	133,980
Industrial	15,955	211,474	75,204
Commercial	28,823	253,837	19,539
Unclassified	5,367	52,447	48,240

NOTE: Minimum size projects included are: Waterworks and waterway projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other building, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1946 (11 wk.)	Cumulative 1945 (11 wk.)
NON-FEDERAL	$169,334	$126,316
Corporate Securities	74,487	10,035
State and Municipal	94,847	116,281
RFC Loans	.....	.....
REA Loans	.....	.....
Fed. Aid Highway	.....	.....
FEDERAL	158,320	77,137
Total Capital	$327,654	$203,453

EN RINDEX NUMBERS

Index Base = 100	1913	1926
Construction Cost	323.83	155.66
Building Cost	245.41	132.66
Volume	167	73